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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DANIEL J. MCGURRAN,
JAMES A. OLSON, and
MARK N. SCHAEFFER

Appeal 2008-4419
Application 09/872,532
Technology Center 1700

Decided:¹ February 20, 2009

Before EDWARD C. KIMLIN, PETER F. KRATZ, and CATHERINE Q.
TIMM, *Administrative Patent Judges*.

TIMM, *Administrative Patent Judge*.

DECISION ON APPEAL

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the Decided Date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

I. STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's decision rejecting claims 1, 2, 10, 11, 13-19, and 21-27. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

The invention relates to a pigmented optical body including both pigment and dye. Claim 1 is illustrative:

1. A pigmented optical body comprising at least one layer of a thermoplastic polymer material, wherein dispersed within the polymer material is between 0.01 and 1 percent by weight of a particulate pigment having a mean diameter no more than 500 nm, wherein the optical body exhibits a transmission of light, within a wavelength band of 400 nm – 700 nm, of from 5% to 90%, wherein the dispersed particulate pigment imparts a substantial transmitted color to the optical body, the optical body further comprising at least one dye added in an amount sufficient to adjust the transmitted color of the optical body to a substantially neutral gray.

On review is the Examiner's rejection of claims 1, 2, 10, 11, 13-19, and 21-27 under 35 U.S.C. § 103(a) as unpatentable over Enniss² alone or in view of Oliver³ or Marks.⁴

Appellants present arguments under separate headings for claims 1, 13, 14, 16, and 24. Appellants argue claims 26 and 27 under one heading. We consider each of the separately argued claims and select claim 26 to

² The Examiner relies upon two "Enniss" references: US 2006/0003158 A1, published Jan. 5, 2006 and US 6,440,551 B1, issued Aug. 27, 2002, both to Enniss et al. Appellants state that the "Enniss '158 Publication is in effect a continuation of Enniss '551 Patent Application." (Reply Br. 2.) Appellants collectively refer to both documents as "Enniss." (Br. 8; Reply Br. 2.) We do the same. We cite to Enniss '158.

³ Oliver et al., US 4,634,637, issued Jan. 6, 1987.

⁴ Marks et al., US 3,298,959, issued Jan. 17, 1967.

represent claims 26 and 27. All other claims stand or fall with the argued claim from which they depend. *See* 37 C.F.R. § 41.37(c)(1)(vii) (“When multiple claims subject to the same ground of rejection are argued as a group by appellant, the Board may select a single claim from the group of claims that are argued together to decide the appeal with respect to the group of claims as to the ground of rejection on the basis of the selected claim alone.”).

II. DISPOSITIVE ISSUES

For each of the representative claims, the issue is: Have Appellants shown the Examiner reversibly erred in determining that the Enniss either alone or in combination with Oliver or Marks teaches or suggests:

- A. an optical body including a layer including pigment in an amount imparting “a substantial transmitted color,” wherein the optical body further comprises at least one dye in an amount “sufficient to adjust the transmitted color” as required by claim 1;
- B. an optical body including dye in an amount that “adjusts the transmitted color of the optical body by no more than 15 units of a* and by no more than 15 units of b*” as required by claims 13 and 14;
- C. an optical body with a layer with pigment “in an amount effective to produce a tint perceptible to an observer” as required by claim 14;
- D. an optical body with an “a* value and a b* value in the range of -1.5+1” as required by claim 16;
- E. an optical body with carbon black pigment as required by claim 24;
- F. a window film including between 0.02 and 0.5 wt.% carbon black as required by claim 26; and

G. a window film wherein the layer including carbon black comprising a layer of oriented polymer as further required by claim 26?

III. PRINCIPLES OF LAW

The determination of obviousness under § 103 requires an objective analysis:

“Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.”

KSR Int'l Co. v. Teleflex Inc., 127 S. Ct. 1727, 1734 (2007) (quoting *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966)).

Because the objective analysis requires consideration of the level of ordinary skill in the pertinent art, the obviousness analysis is guided by the basic principle that the question under 35 U.S.C. § 103 is not merely what the references expressly teach but what they would have suggested to one of ordinary skill in the art at the time the invention was made. *Merck & Co., v. Biocraft Labs., Inc.*, 874 F.2d 804, 807 (Fed. Cir. 1989) and *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). That is, the question of obviousness cannot be approached on the basis that an artisan having ordinary skill would have known only what they read in the references, because such artisan is presumed to know something about the art apart from what the references disclose. *In re Jacoby*, 309 F.2d 513, 516 (CCPA 1962). See also *KSR*, 127 S. Ct. at 1741 (an obviousness analysis “need not seek out

precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.”).

IV. FINDINGS OF FACT

The following enumerated findings of fact (“FF”) are of particular relevance to the obviousness analysis in this case:

1. Appellants’ invention and Enniss are both directed to fabricating optical bodies such as colored, polyester-based window films (Spec. p. 1, ll. 7-10; p. 15, ll. 12-19; Enniss ¶ [0001-02], Example 1). Gray-toned films are especially desirable in the market (Enniss, ¶ [0004]).
2. Both Appellants and Enniss recognize that there are problems with gray-toned films created by dyeing the film with the necessary proportions of red, blue, and yellow organic dyes. Because these dyes degrade at different rates in light, light exposure alters color, deteriorates tinting power, causes bleaching or fading, and reduces light transmission. (Spec., p. 1, ll. 17-27; Enniss ¶ [0004].)
3. Enniss discloses that, in particular, the yellow dye light-degrades more quickly than the red and blue dyes causing the film to decompose (fade) undesirably to a more purple color tone (Enniss, ¶ [0004]).
4. Appellants and Enniss solve the fading problem by including pigment as well as dye to obtain the desired overall color (gray-tone). The pigment and dye are either mixed into a single layer or placed into separate layers such that when the layers are viewed collectively the

- perceived color tone with be that of the finished predetermined color tone (Spec. p. 2, ll. 22-31 and p. 3, ll. 21-24; Enniss ¶ [0006], [0031]).
5. Enniss does not particularly limit the order of addition of pigment and dye. Pigment may be added first. Enniss discloses an embodiment of first dispersing pigment throughout film layer 12 and then dying film layer 12 to have a color deficiency which is integrally satisfied by the pigment (Enniss ¶ [0031]).
 6. Enniss does not particularly limit the concentration of dye. Enniss discloses that film layer 12 may be uncolored or colored. Whatever the color deficiency of the film layer, the deficiency is satisfied by the pigment (Enniss, ¶¶ [0023-24]).
 7. According to Appellants' Specification, the dye concentration is kept relatively low so that it has a minor effect on the percent transmission of the optical body compared to the effect of the particulate pigment.
 8. The Specification does not provide any guidance as to what concentration levels are encompassed by levels that impart "a substantial transmitted color" as recited for the pigment in claim 1, are "sufficient to adjust the transmitted color" as recited for the dye in claim 1, or "effective to produce a tint perceptible to an observer" as recited for the pigment in claim 14. (Spec. in its entirety.)
 9. According to the Specification, a* and b* are color scale values indicating the color hue and color saturation of that hue. For hue, a positive a* is indicative of red, while a negative a* is indicative of green. A positive b* is indicative of yellow, while a negative b* is indicative of blue. The higher the absolute numerical value, the higher the saturation of the color. (Spec., p. 12, ll. 10-30.)

10. A neutral gray color corresponds to both a^* and b^* having a value at or near zero. Appellants, for purposes of the present application, considers neutral gray, at its outer limits, as having $|a^*| \leq 5$ and $|b^*| \leq 5$ with values approaching 1 as preferred. For some window glazing applications a slight blue/green tint ($a^* = b^* = -1.5$) is preferred. (Spec., p. 12, l. 31 to p. 13, l. 9.)
11. Tint is used in the Specification as another word for color or hue (see, e.g., Spec., p. 1, ll. 17-27; p. 9, ll. 9-12).

V. ANALYSIS

Turning first to the issue as it applies to claim 1, we note that this claim does not particularly limit the relative amounts of pigment as compared to dye with any degree of precision. The pigment need only impart “a substantial transmitted color” to the optical body. The dye amount is “an amount sufficient to adjust the transmitted color of the optical body to a substantially neutral gray.” The Specification does not provide any limits for these “amounts.” (FF 8.)

Nor, taking the broadest reasonable interpretation of the claim, can we say that the claim limits the concentrations in a way that distinguishes the claimed pigmented optical body from that of Enniss. Enniss incorporates both pigment and dye. The pigment and dye are both added in amounts to adjust the transmitted color in that each contributes to the finished color tone. Enniss broadly discloses a wide range of concentrations (FF 6). In fact, the dye need not even be present (FF 6), and under such circumstances, one of ordinary skill in the art would understand that the pigment would contribute “a substantial transmitted color” to the film. The key is that the

concentrations of dye and pigment are complementary so that whatever deficiency is present due to the absence of dye, that deficiency is satisfied by the pigment. The broad disclosure of Enniss would have suggested the pigmented optical body of claim 1 to one of ordinary skill in the art.

Turning to the limitation in claims 13 and 14 requiring an optical body including dye in an amount that “adjusts the transmitted color of the optical body by no more than 15 units of a^* and by no more than 15 units of b^* ,” we determine that, based on the broad concentrations of dye relative to pigment suggested by Enniss, including embodiments in which no dye is present at all, this claim limitation is met. Low levels of dye translate to low values of a^* and b^* as there would be low levels of color saturation due to the dye.

Turning to the further limitation in claim 14 requiring pigment to be “in an amount effective to produce a tint perceptible to an observer,” as the pigment of Enniss is added to correct a color deficiency in the film layer, it necessarily produces a tint, i.e., a color.

With regard to the limitation in claim 16 requiring that the optical body have an a^* value and a b^* value in the range of -1.5 ± 1 ,” we note that neutral gray has a^* and b^* values close to zero, and zero is within the claimed range (FF10). Enniss suggests that gray-toned films are especially desirable (FF 1). In optimizing the dye and pigment concentrations according to the teachings of Enniss to obtain gray-toned film, one of ordinary skill in the art would have by necessity also have been optimizing the a^* and b^* values to values close to zero.

Claim 24 requires that the pigment of claim 1 be carbon black. The Examiner relies upon Marks and Oliver to show that carbon black was a known pigment for achieving gray-tones (Ans. 6). Appellants contend that

Enniss teaches away from the use of a carbon black “such that a requisite suggestion to combine Enniss with Oliver or Marks does not exist.” (Br. 9.) This is because, according to Appellants, carbon black would not address the ‘color deficiency’ of a gray-toned dyed film.” (Br. 9.) Appellants offer no evidence that carbon black would not address the problem in Enniss, and, in fact, there is evidence that carbon black can impart a noticeable yellow or bronze color (Spec. p. 3, ll. 14-16). As carbon black was a known pigment, it is more likely than not that those of ordinary skill in the art would have understood its coloring properties. Enniss specifically describes embodiments in which the deficiency is a yellow color deficiency. Based on the evidence of the conventional nature of carbon black, and the lack of evidence in support of Appellants’ argument, we determine that the weight of the evidence favors a conclusion of obviousness with respect to claim 24.

Turning to the requirement of a particular concentration of carbon black in claim 26, given that carbon black was a known pigment for use in coloring films, we agree with the Examiner that forming a window film including between 0.02 and 0.5 wt. % carbon black would have been within the capabilities of one of ordinary skill in the art, the specific amount being dependent on the color hue and saturation desired in the window film application. In such a situation, the burden shifts to the Appellants to present a showing of criticality of the range for unexpected beneficial results. *See In re Boesch*, 617 F.2d 272, 276 (CCPA 1980); *See also In re Woodruff*, 919 F.2d 1575, 1578 (Fed. Cir. 1990); *Aller*, 220 F.2d at 456. Appellants present no convincing evidence of unexpected results on this record.

With respect to claim 26, Appellants also contend that Enniss does not teach using an oriented polymer (Br. 10). This argument does not address

the Examiner's finding that "polyester films are conventionally cast and oriented to make them thinner and stronger." (Ans. 7.) Enniss teaches using polyester (FF 1).

Appellants have not shown the Examiner reversibly erred in determining that it would have been obvious to arrive at an optical body or window film having the claimed structure for any of the argued claims.

VI. CONCLUSION

Appellants have limited the scope of their arguments to the above issues and do not further contest the Examiner's rejection of the claims. Therefore, we sustain the Examiner's rejection of claims 1, 2, 10, 11, 13-19, and 21-27 under 35 U.S.C. § 103(a).

VII. DECISION

The decision of the Examiner is affirmed.

VIII. TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(v).

AFFIRMED

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Appeal 2008- 4419
Application 09/872,532

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